



## **Challenges of CMP Technology for Advanced Memory Manufacturing** **Yukiteru Matsui, Toshiba Memory Corporation**

This presentation reports an overview of technical trends of advanced memories and its challenges of manufacturing technology focusing on CMP process.

With the arrival of the big data era, progress of AI (artificial intelligence) and IoT (Internet of Things), it is expected that the explosive data volume will continue to increase for the future. So, high capacity, high speed and low power storage device is required. The demand for advanced memories such as 3D NAND and emerging memories including SCM (Storage Class Memory) will increase even more.

To realize the advanced memories, it is necessary to implement new materials and new structures, which increases the difficulty of manufacturing technology. In addition to achieve high process performance, productivity enhancement is also required for low cost device fabrication.

The planarization method by chemical mechanical polishing (CMP) has become the standard technology for semiconductor device manufacturing. Important challenges of CMP technology for the advanced memories are high planarity, low defect and high productivity. Innovative CMP technologies are expected for advanced memory manufacturing.